

pressure on viral evolution. These data have important implications for natural history and vaccine development.

In The Claims:

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After canceling Claims 2-37 as directed in the accompanying Preliminary Amendment, please add new Claims 38-51:

38. (New) A method for detecting within a patient infected by HIV the development of an antibody response capable of blocking infection comprising:

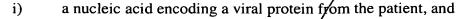
- (a) transfecting into a first cell
 - i) a nucleic acid encoding a viral envelope/protein from the patient, and
 - ii) a viral expression vector which lacks a nucleic acid encoding an envelope protein, and which comprises an indicator nucleic acid which produces a detectable signal,

such that the first cell produces viral particles comprising the envelope protein encoded by the nucleic acid obtained from the patient;

- (b) contacting the viral particles produced in step (a) with an antibody preparation from the patient;
- (c) contacting the viral particles and antibody preparation of step (b) with a second cell, wherein the second cell expresses a cell surface receptor to which the virus binds;
 - measuring the amount of the detectable signal produced by the second cell in order to determine the infectivity of the viral particles; and comparing the amount of signal measured in step (d) with the amount of signal produced in the absence of the antibody preparation, wherein a reduced
 - amount of signal measured in the presence of the antibody preparation indicates that the patient has developed an antibody response to the viral envelope protein capable of blocking infection.
- 39. (New) A method for detecting within a patient infected by a virus the development of an antibody response capable of blocking infection comprising:
 - (a) transfecting into a first cell

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ii) a viral expression vector which lacks a nucleic acid encoding the viral protein, and which comprises an indicator nucleic acid which produces a detectable signal,

such that the first cell produces viral particles comprising the viral protein encoded by the nucleic acid obtained from the patient;

(b) contacting the viral particles produced in step (a) with an antibody preparation from the patient;

- (c) contacting the viral particles and antibody preparation of step (b) with a second cell, wherein the second cell expresses a cell surface receptor to which the virus binds;
- (d) measuring the amount of the detectable signal produced by the second cell in order to determine the injectivity of the viral particles; and
- (e) comparing the amount of signal measured in step (d) with the amount of signal produced in the absence of the antibody preparation, wherein a reduced amount of signal measured in the presence of the antibody preparation indicates that the patient has developed an antibody response to the viral protein capable of blocking infection.
- 40. (New) The method of Claim 39 wherein the viral protein is a capsid protein.
- 41. (New) A method for detecting within a patient infected by HIV the development of an antibody response capable of blocking infection comprising:
 - (a) incubating a first cell comprising

(i) a nucleic acid encoding a viral envelope protein from the patient, and
(ii) a viral expression vector which lacks a nucleic acid encoding an
envelope protein, and which comprises an indicator nucleic acid which
produces a detectable signal,

such that the first coll produces viral particles comprising the envelope protein encoded by the nucleic acid obtained from the patient;

(b) contacting the viral particles produced in step (a) with an antibody preparation from the patient;

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- (c) contacting the viral particles and antibody preparation of step (b) with a second cell, wherein the second cell expresses a cell surface receptor to which the virus binds;
- (d) measuring the amount of the detectable signal produced by the second cell in order to determine the infectivity of the viral particles; and
 - produced in the absence of the antibody preparation, wherein a reduced amount of signal measured in the presence of the antibody preparation indicates that the patient has developed an antibody response to the viral envelope protein capable of blocking infection.
- /42. (New) The method of Claim 41 wherein the nucleic acid of (i) is part of the viral expression vector of (ii).
- 43. (New) The method of Claim 41 wherein the nucleic acid of (i) is integrated into the genome of the first cell.
- 44. (New) The method of Claim 41 wherein the viral vector of (ii) is integrated into the genome of the first cell.
- 45. (New) The method of Claim 41 wherein the nucleic acid of (i) and the viral vector of (ii) are integrated into the genome of the first cell.
- 46. (New) A method for detecting within a patient infected by a virus the development of an antibody response capable of blocking infection comprising:
 - (a) incubating a first cell comprising
 - (i) a nucleic acid encoding a viral protein from the patient, and
 - (ii) a viral expression vector which lacks a nucleic acid encoding the viral protein, and which comprises an indicator nucleic acid which produces a detectable signal,

such that the first cell produces viral particles comprising the viral protein encoded by the nucleic acid obtained from the patient;